Chemistry Tests: Clinical Interpretation

Analyte	Clinical Interpretation
Alanine Transaminase (ALT) (SGPT)	▲ Liver disease (hepatocyte injury), hepatitis, drug therapy, biliary disease
Albumin	▲ Dehydration ▼ Liver disease, nephrotic syndrome, heart failure, low intake/ absorption of protein
Alkaline Phosphatase	▲ Bone growth & disease, liver disease, malignancies in bone & liver, leukemia
Aspartate Transaminase (AST) (SGOT)	▲ Alcoholism, cirrhosis, hepatitis, drug therapy, biliary disease ▼ Uremia, B6 deficiency, drug therapy
Bilirubin, Direct	▲ Liver disease (hepatitis, cirrhosis, neoplasms), biliary disease, neonatal jaundice
Bilirubin, Total	▲ Liver disease (hepatitis, cirrhosis, neoplasm), alcoholism, hemolytic disease, biliary obstruction, neonatal jaundice, anorexia
Calcium	▲ Hyperparathyroidism, bone, lung, & breast cancer, bone resorption ▼ Low intake/absorption, vitamin D deficiency
Carbon Dioxide	▲ Respiratory acidosis, metabolic alkalosis ▼ Respiratory alkalosis, metabolic acidosis
Chloride	▲ Dehydration, metabolic acidosis ▼ Overhydration, respiratory acidosis, metabolic alkalosis
Cholesterol	▲ Coronary arterial occlusion, atherosclerosis, hypothyroidism ▼ Low intake/absorption, hematologic disorders
Creatinine	▲ Renal disease, insufficiency, low glomerular filtration ▼ Decreased muscle mass, severe liver disease
Ferritin	▲ Hemochromatosis, hematologic disorders, acute liver disease, leukemia, lymphoma, hepatocellular carcinoma ▼ Iron deficiency
Gamma Glutamyltransferase (GGT)	▲ Biliary obstruction, cirrhosis, hepatitis, liver & pancreatic cancer, alcoholism
Glucose	▲ Diabetes ▼ Insulinoma
High Density Lipoprotein (HDL)	▲ Estrogens, birth control pills, drug therapy ▼ Coronary atherosclerosis & heart disease, obesity, diabetes, uremia
Iron	▲ Hemochromatosis, hemolytic anemia, acute liver disease ▼ Iron deficiency anemia
Lactate Dehydrogenase (LD)	▲ Neoplasms, hematologic disorders, myocardial, pulmonary & renal infarct, infectious mononucleosis
Low Density Lipoprotein (LDL)	▲ Coronary atherosclerosis
Magnesium	▲ Renal failure, respiratory failure ▼ Seizures, tetany, cardiac arrhythmias, low Ca^{++} & K^{+}
Phosphorus (Phosphate)	▲ Kidney stone, renal failure, acromegaly, hypoparathyroidism, bone metastasis ▼ Osteomalacia, hyperparathyroidism
Potassium	▲ Trauma, Addison's disease, acidosis, renal disease ▼ Primary aldosteronism, metabolic alkalosis, Cushing's syndrome, renal tubular disease
Protein, Total	▲ Dehydration ▼ Decreased intake/absorption, edema
Sodium	▲ Dehydration, Cushing's syndrome, aldosteronism ▼ Addison's disease, hypopituitarism, liver disease
Total Iron Binding Capacity (TIBC)	▲ Iron deficiency ▼ Hemochromatosis
Triglycerides	▲ Atherosclerosis, coronary artery disease, diabetes, high carbohydrate intake, obesity, pancreatitis
Urea Nitrogen, Blood	▲ Chronic renal disease, acute renal failure, ketoacidosis, dehydration, GI bleeding ▼ Late normal pregnancy, decreased protein intake, IV fluids, SIADH, severe liver damage
Uric Acid	▲ Gout, kidney stone, inborn error of metabolism, diuretics, disseminated neoplasms, alcohol consumption, renal failure, hypertension

The above interpretive information is not all-inclusive and does not constitute nor should it be relied upon as medical advice. Abnormal levels may be observed in additional disorders. Test results should be interpreted in context of clinical signs and symptoms. Reference: Laboratory Test Handbook, 4th edition. Jacobs DS, Demott WR, Grady HJ, et al (eds.), Lexi-Comp Inc., Hudson, Ohio, 1996

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